

SEQUENCE LISTING

<110> Japan as Represented by Secretary of Agency of Industrial Science  
and Technology

<120> Sulphur Free Enzyme

<130> PH-911-PCT

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<150> JP99/183664

<151> 29-JUN-1999

<160> 10

<170> PatentIn Ver. 2.0

<210> 1

<211> 159

<212> PRT

<213> E. coli

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Phe	Lys	Arg	Asn	Thr	Leu	Asn	Lys	Pro	Val	Ile	Met	Gly	Arg	His
				35					40					45
Thr	Trp	Glu	Ser	Ile	Gly	Arg	Pro	Leu	Pro	Gly	Arg	Lys	Asn	Ile
				50					55					60
Ile	Leu	Ser	Ser	Gln	Pro	Gly	Thr	Asp	Asp	Arg	Val	Thr	Trp	Val
				65					70					75
Lys	Ser	Val	Asp	Glu	Ala	Ile	Ala	Ala	Ala	Gly	Asp	Val	Pro	Glu
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Ile Met Val Ile Gly Gly Gly Arg Val Tyr Glu Gln Phe Leu Pro		
	95	100 105
Lys Ala Gln Lys Leu Tyr Leu Thr His Ile Asp Ala Glu Val Glu		
	110	115 120
Gly Asp Thr His Phe Pro Asp Tyr Glu Pro Asp Asp Trp Glu Ser		
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Val Phe Ser Glu Phe His Asp Ala Asp Ala Gln Asn Ser His Ser		
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Tyr Ser Phe Glu Ile Leu Glu Arg Arg		
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<210> 2

<211> 566

<212> DNA

<213> E. coli

<221> CDS

<222> (81)... (557)

<400> 2

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<210> 3

<211> 185

<212> PRT

<213> B. subtilis

<400> 3

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				20					25					30
Ser	Asn	Thr	Gly	Asn	Phe	Val	Val	Gly	Lys	Gly	Trp	Thr	Thr	Gly
				35					40					45
Ser	Pro	Phe	Arg	Thr	Ile	Asn	Tyr	Asn	Ala	Gly	Val	Trp	Ala	Pro
				50					55					60
Asn	Gly	Asn	Gly	Tyr	Leu	Thr	Leu	Tyr	Gly	Trp	Thr	Arg	Ser	Pro
				65					70					75
Leu	Ile	Glu	Tyr	Tyr	Val	Val	Asp	Ser	Trp	Gly	Thr	Tyr	Arg	Pro
				80					85					90
Thr	Gly	Thr	Tyr	Lys	Gly	Thr	Val	Lys	Ser	Asp	Gly	Gly	Thr	Tyr
				95					100					105
Asp	Ile	Tyr	Thr	Thr	Thr	Arg	Tyr	Asn	Ala	Pro	Ser	Ile	Asp	Gly
				110					115					120
Asp	Arg	Thr	Thr	Phe	Thr	Gln	Tyr	Trp	Ser	Val	Arg	Gln	Ser	Lys
				125					130					135
Arg	Pro	Thr	Gly	Ser	Asn	Ala	Thr	Ile	Thr	Phe	Ser	Asn	His	Val
				140					145					150
Asn	Ala	Trp	Lys	Ser	His	Gly	Met	Asn	Leu	Gly	Ser	Asn	Trp	Ala
				155					160					165
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<211> 558

<212> DNA

<213> B. subtilis

<221> CDS

<222> (1)... (555)

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<210> 5

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<212> PRT

<213> E. coli

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5

10

15

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	35	40	45
Thr Trp Glu Ser Ile Gly Arg Pro Leu Pro Gly Arg Lys Asn Ile			
	50	55	60
Ile Leu Ser Ser Gln Pro Gly Thr Asp Asp Arg Val Thr Trp Val			
	65	70	75
Lys Ser Val Asp Glu Ala Ile Ala Ala Ala Gly Asp Val Pro Glu			
	80	85	90
Ile Phe Val Ile Gly Gly Gly Arg Val Tyr Glu Gln Phe Leu Pro			
	95	100	105
Lys Ala Gln Lys Leu Tyr Leu Thr His Ile Asp Ala Glu Val Glu			
	110	115	120
Gly Asp Thr His Phe Pro Asp Tyr Glu Pro Asp Asp Trp Glu Ser			
	125	130	135
Val Phe Ser Glu Phe His Asp Ala Asp Ala Gln Asn Ser His Ser			
	140	145	150
Tyr Ser Phe Glu Ile Leu Glu Arg Arg			
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<211> 569

<212> DNA

<213> E. coli

<221> CDS

<222> (81)... (560)

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<210> 7

<211> 353

<212> PRT

<213>

<400> 7

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				20					25					30
Phe	Lys	Arg	Asn	Thr	Leu	Asn	Lys	Pro	Val	Ile	Tyr	Gly	Arg	His
				35					40					45
Thr	Trp	Glu	Ser	Ile	Gly	Arg	Pro	Leu	Pro	Gly	Arg	Lys	Asn	Ile
				50					55					60
Ile	Leu	Ser	Ser	Gln	Pro	Gly	Thr	Asp	Asp	Arg	Val	Thr	Trp	Val
				65					70					75
Lys	Ser	Val	Asp	Glu	Ala	Ile	Ala	Ala	Ala	Gly	Asp	Val	Pro	Glu
				80					85					90
Ile	Phe	Val	Ile	Gly	Gly	Gly	Arg	Val	Tyr	Glu	Gln	Phe	Leu	Pro
				95					100					105
Lys	Ala	Gln	Lys	Leu	Tyr	Leu	Thr	His	Ile	Asp	Ala	Glu	Val	Glu

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Gly Asp Thr His Phe Pro Asp Tyr Glu	Pro Asp Asp Trp Glu Ser	
125	130	135
Val Phe Ser Glu Phe His Asp Ala Asp	Ala Gln Asn Ser His Ser	
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Tyr Ser Phe Glu Ile Leu Glu Arg Arg	Gly Gly Gly Gly Ser Gly	
155	160	165
Gly Gly Gly Ala Ser Thr Asp Tyr Trp	Gln Asn Trp Thr Asp Gly	
170	175	180
Gly Gly Ile Val Asn Ala Val Asn Gly	Ser Gly Gly Asn Tyr Ser	
185	190	195
Val Asn Trp Ser Asn Thr Gly Asn Phe	Val Val Gly Lys Gly Trp	
200	205	210
Thr Thr Gly Ser Pro Phe Arg Thr Ile	Asn Tyr Asn Ala Gly Val	
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Trp Ala Pro Asn Gly Asn Gly Tyr Leu	Thr Leu Tyr Gly Trp Thr	
230	235	240
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245	250	255
Tyr Arg Pro Thr Gly Thr Tyr Lys Gly	Thr Val Lys Ser Asp Gly	
260	265	270
Gly Thr Tyr Asp Ile Tyr Thr Thr Thr	Arg Tyr Asn Ala Pro Ser	
275	280	285
Ile Asp Gly Asp Arg Thr Thr Phe Thr	Gln Tyr Trp Ser Val Arg	
290	295	300
Gln Ser Lys Arg Pro Thr Gly Ser Asn	Ala Thr Ile Thr Phe Ser	
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Asn His Val Asn Ala Trp Lys Ser His	Gly Met Asn Leu Gly Ser	
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335

340

345

Gly Ser Ser Asn Val Thr Val Trp

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<210> 8

<211> 1153

<212> DNA

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<210> 9

<211> 353

<212> PRT

<213>

<400> 9

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Phe	Lys	Arg	Asn	Thr	Leu	Asn	Lys	Pro	Val	Ile	Tyr	Gly	Arg	His
				35					40					45
Thr	Trp	Glu	Ser	Ile	Gly	Arg	Pro	Leu	Pro	Gly	Arg	Lys	Asn	Ile
				50					55					60
Ile	Leu	Ser	Ser	Gln	Pro	Gly	Thr	Asp	Asp	Arg	Val	Thr	Trp	Val
				65					70					75
Lys	Ser	Val	Asp	Glu	Ala	Ile	Ala	Ala	Ala	Gly	Asp	Val	Pro	Glu
				80					85					90
Ile	Phe	Val	Ile	Gly	Gly	Gly	Arg	Val	Tyr	Glu	Gln	Phe	Leu	Pro
				95					100					105
Lys	Ala	Gln	Lys	Leu	Tyr	Leu	Thr	His	Ile	Asp	Ala	Glu	Val	Glu
				110					115					120
Gly	Asp	Thr	His	Phe	Pro	Asp	Tyr	Glu	Pro	Asp	Asp	Trp	Glu	Ser
				125					130					135
Val	Phe	Ser	Glu	Phe	His	Asp	Ala	Asp	Ala	Gln	Asn	Ser	His	Ser
				140					145					150
Tyr	Ser	Phe	Glu	Ile	Leu	Glu	Arg	Arg	Gly	Gly	Gly	Gly	Ser	Gly
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Gly Gly Ile Val Asn Ala Val Asn Gly Ser Gly Gly Asn Tyr Ser		
	185	195
Val Asn Trp Ser Asn Thr Gly Asn Phe Val Val Gly Lys Gly Trp		
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Thr Thr Gly Ser Pro Phe Arg Thr Ile Asn Tyr Asn Ala Gly Val		
	215	225
Trp Ala Pro Asn Gly Asn Gly Tyr Leu Thr Leu Tyr Gly Trp Thr		
	230	240
Arg Ser Pro Leu Ile Glu Tyr Tyr Val Val Asp Ser Trp Gly Thr		
	245	255
Tyr Arg Pro Thr Gly Thr Tyr Lys Gly Thr Val Lys Ser Asp Gly		
	260	270
Gly Thr Tyr Asp Ile Tyr Thr Thr Thr Arg Tyr Asn Ala Pro Ser		
	275	285
Ile Asp Gly Asp Arg Thr Thr Phe Thr Gln Tyr Trp Ser Val Arg		
	290	300
Gln Ser Lys Arg Pro Thr Gly Ser Asn Ala Thr Ile Thr Phe Ser		
	305	315
Asn His Val Asn Ala Trp Lys Ser His Gly Leu Asn Leu Gly Ser		
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<210> 10

<211> 1153

<212> DNA

<213>

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